

## ABSTRACT

The expanding of information technology day after day push producer to increase the quality of service to consumer, specially service of multimedia include voice and also data. Therefore, transfer of information need big capacities, quickly, and cheap.

To fulfill the desire, used fibre optic as the transmission media. The type of this fibre optic is single mode. As we know, single mode fibre optic has wide bandwidth and of course represent advantage because it can transmit the information in big capacities. Besides, it is used digital transmission hierarchy which recognized by the name of PDH (Plesiochronous Digital Hierarchy). Physically, PDH peripheral has big dimension consist of modules of multiplexer structured in rack. Rack even also lapped over pursuant level of PDH. Fibre optic as transmission media needs transmitter and also optical receiver (*OLTE / Optical Line Terminating Equipment*) separately from PDH peripheral. Now, the system of PDH and OLTE can be integrated into one peripheral called Optimux.

Basically, optimux's system based on PDH, where in peripheral of optimux there are OLTE and multiplexer / demultiplexer, and of course single mode fibre optic as the medium. This final project analyze the performance of PDH's system and optimux's system, where parameter that compared is BER and delay. From all of the parameter, can be known what optimux can change PDH's system existing with performance that its had for transmission link Bandung regional.